

### REMARKS

This is a full and timely response to the non-final Official Action mailed **June 4, 2003** (Paper No. 3). Reconsideration of the application in light of the above amendments and the following remarks is respectfully requested.

By the forgoing amendment, minor corrections are made to the specification and some new claims are added. Specifically, new claims 18-27 are added. None of the original claims has been amended or cancelled. Thus, claims 1-27 are currently pending for the Examiner's consideration.

In the outstanding Office Action, the Examiner indicated the allowance of claims 7-9 and 15-17. Applicant wishes to thank the Examiner for the allowance of these claims.

The Office Action also contained an objection to Fig. 1 in which it was indicated that Fig. 1 should be labeled as "Prior Art." Consequently, Applicant has included a proposal in this amendment to label Fig. 1 as "Prior Art" as required by the Examiner. Approval for this proposed drawing change and withdrawal of the objection to Fig. 1 are respectfully requested.

With regard to the prior art, claims 1-6 and 10-14 were rejected as anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,148,310 to Batchko ("Batchko"). For at least the following reasons, this rejection is respectfully traversed.

Claim 1 recites:

A volumetric three dimensional display device with an interactive pointer, the device comprising:

a rotating helical display screen that sweeps out a cylindrical three-dimensional display space;

à projector for projecting two-dimensional slices of a three-dimensional data set on said rotating helical display screen so as to generate a three-dimensional volumetric display on said rotating helical display screen; and  
a laser pointer generating a pulsed laser beam.

Similarly, claim 10 recites:

A method of providing a volumetric three dimensional display device with an interactive pointer, the method comprising the steps of:  
rotating a helical display screen that sweeps out a cylindrical three-dimensional display space;  
projecting two-dimensional slices of a three-dimensional data set on said rotating helical display screen so as to generate a three-dimensional volumetric display on said rotating helical display screen; and  
generating a pulsed laser beam on a laser pointer.

In contrast, Batchko fails to teach or suggest many of the elements of claims 1 and 10.

For example, Batchko fails to teach or suggest a "helical display screen." The rotating display screen (44) taught by Batchko is flat and *not helical*. (See Figs 1 and 2).

Moreover, Batchko fails to teach or suggest a "pulsed laser beam," as claimed.

Batchko teaches a scanner (26) that projects a 2-D image onto the display screen (44).

Batchko even mentions that this projector may use a laser. (Col. 6, lines 18-20). However,

Batchko never teaches or suggests that the scanner (26) generates a *pulsed* laser beam.

Thus, Batchko fails to teach or suggest a helical display screen or a pointer that generates a pulsed laser beam. "A claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. Therefore, for at least these reasons, the rejection of claims 1-6 and 10-14 should be reconsidered and withdrawn.

Turning to claim 3, we have the following recitations: “wherein said laser pointer further comprises a phase control device for controlling a phase of said pulsed laser beam such that said pulsed laser beam strikes said rotating screen at different points in said three-dimensional display space as said phase is changed.” Claim 12 recites similar subject matter in the form of a method claim.

According to the Office action, the synchronization module (58) taught by Batchko anticipates the phase control device recited in claim 3. This is incorrect.

The synchronization module (58) taught by Batchko is for “synchronizing the frame rate of the scanned image (28) [from scanner 26)] with the motion of the display screen.” (Col. 7, lines 59-63). Thus, the synchronization module (58) taught by Batchko does not control the “phase of a pulsed laser beam” as claimed. Rather, the synchronization module (58) controls the frame rate of a continuous projection that *is not pulsed*.

Again, “[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. Therefore, for at least these additional reasons, the rejection of claims 3 and 12 should be reconsidered and withdrawn.

Turning to claim 5, we have the following recitations “wherein said laser pointer further comprises an orientation sensor and said laser pointer wireless transmits a signal indicating said pointer's orientation relative to said three-dimensional display space.” Claim 13 recites similar subject matter in the form of a method claim.

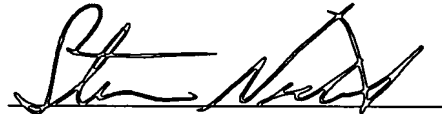
According to the Office Action, Batchko teaches an orientation sensor at col. 3, lines 26-34 and col. 6, lines 18-45. Applicant has carefully reviewed these sections of the Batchko reference, but finds no teaching whatsoever of an orientation sensor that wirelessly transmits a signal indicating the orientation of a pointer relative to a display space as claimed.

Again, "[a] claim is anticipated [under 35 U.S.C. § 102] only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added). See M.P.E.P. § 2131. Therefore, for at least these additional reasons, the rejection of claims 5, 6, 13 and 14 should be reconsidered and withdrawn.

For similar reasons to those given above, the newly-added claims are also thought to be clearly patentable over the prior art of record. Thus, examination and allowance of the newly-added claims is respectfully requested.

For the foregoing reasons, the present application is thought to be clearly in condition for allowance. Accordingly, favorable reconsideration of the application in light of these remarks is courteously solicited. If any fees are owed in connection with this paper which have not been elsewhere authorized, authorization is hereby given to charge those fees to Deposit Account 18-0013 in the name of Rader, Fishman & Grauer PLLC. If the Examiner has any comments or suggestions which could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the number listed below.

Respectfully submitted,



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DATE: 3 September 2003

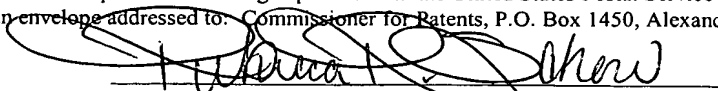
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CERTIFICATE OF MAILING

DATE OF DEPOSIT: September 3, 2003

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail, on the date indicated above in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
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